

Serial No.: 09/600,674

### **REMARKS**

Claims 1-9 are pending in the application. The title of the invention has been amended to correct a typographical error as noted by the Examiner. Favorable reconsideration of the application, as amended, is respectfully requested.

#### ***I. OATH/DECLARATION***

The Examiner objects initially to the Oath/Declaration as missing from the application. Applicants records indicate that the Declaration was received by the Patent Office on November 6, 2000. Similarly, the Notice of Acceptance under 35 USC §371 further indicates that the Declaration was received. Regardless, applicants provide herewith another copy of the Oath/Declaration.

#### ***II. REJECTION OF CLAIMS 1-3, 7 AND 9 UNDER 35 USC §103(a)***

Claims 1, 2, 3, 7 and 9 are rejected under 35 USC §103(a) based on *Inaba et al.* in view of *Chen et al.* This rejection is respectfully traversed for at least the following reasons.

##### ***I. Present Invention***

Claim 1 is the sole independent claim. Claim 1 defines a method of operating on a text comprising a plurality of text units, each comprising one or more strings. A structure is formed for each of at least some of the strings, in which structure a string is associated with each *pair of text units* in which the string occurs. For each *pair of the text units*, the number of occurrences of each other text unit in the same structure or structures is summed so as to form an individual score for each pair of text units. The individual scores for each *pair of text units* is processed in order to form a final score for each *pair of text units* to determine how many times any string is shared between each *pair of text units* and other text units.

As described in the present application, the formation of the structures and scoring based on each *pair of text units* according to the invention provides a considerably faster technique for determining lexical cohesion between different text

Serial No.: 09/600,674

units. (See, e.g., spec., page 24, lines 6-column 25, line 11). Thus, it is important that the relationship between each of the different *pair of text units* be evaluated and scored in order to reflect such cohesion.

CODES	TEXT UNIT PAIRS
BZ	2-3 2-4 2-5 3-4 3-5 3-2 3-4 3-5 4-2 4-3 4-3 4-5 5-2 5-3 5-3 5-4
F	1-2 1-3 1-6 2-1 2-3 2-6 3-1 3-2 6-1 6-2
FA	2-5 5-2
IV	4-5 5-4
CN	3-4 4-3

Table, Page 40

The present application, in the table at page 40 (reproduced above) for example, illustrates how the relative importance of *pairs* of text units is scored. In the illustrated example, a list of *pairs* of text units is associated with a string which is contained in the pairs of text units. In the table at page 40, it is the text unit *pairs* which are scored, e.g., pairs such as 2-3, 2-4, 2-5, 3-4, etc., where 2, 3, 4, etc. are text units representing respective sentences, for example.

*ii. Inaba et al.*

*Inaba et al.* describes a document retrieval system for searching a document coinciding with a retrieval request inputted by the user. *Inaba* describes determining the frequency at which words of the retrieval request appear in the documents. However, there is no teaching or suggestion in *Inaba et al.* as to any determination of lexical cohesion among text units. Even more specifically, there is no teaching or suggestion of the formation of the structures and scoring based on each *pair of text units* as recited in claim 1.

Serial No.: 09/600,674

Initially, the Examiner argues that by comparing the frequency of a word in a document, *Inaba et al.* teaches a comparison of two textual objects (equivalent to a pair of text). (O.A., p. 3). However, applicants respectfully disagree.

Claim 1 refers to scoring each pair of *text units*. The text units, by definition, are similar in type (e.g., a unit is a sentence, and a pair of text units is a pair of sentences as expressly recited in claim 3). Thus, *Inaba et al.* does not teach or suggest a comparison of each pair of text units as recited in claim 1.

The Examiner further argues that *Inaba et al.* teaches scoring individual scores for each pair of text units as recited in claim 1, citing the calculation of word cooccurrence as described in Col. 4, lines 17-23 and 30-4. (O.A., p. 3). However, "word cooccurrence" as discussed in *Inaba et al.* is very different to the scoring for pairs of text units as found in the present invention.

More specifically, cooccurrence in *Inaba et al.* refers to two words occurring within the same document. The present invention, on the other hand, is concerned with "for each pair of text units (e.g., each pair of sentences), summing the number of occurrences of each other text unit (e.g., sentence) in the same structure to form an individual score for each pair of text units; and processing the individual scores in order to form a final score for each pair of text units (e.g. pair of sentences) to determine how many times any string (e.g., word) is shared between each pair of text units and other text units. Thus, the present invention is substantially more involved than simply detecting the occurrence of two words within the same document.

**iii. Chen et al.**

The Examiner admits that *Inaba et al.* does not specifically teach a structure for strings associated with pairs of text units. However, the Examiner contends that *Chen et al.* makes up for such deficiencies. Applicants respectfully disagree.

*Chen et al.* teaches generating a list for each word of the document which identifies each sentence in which that word occurs. (Column 5, lines 36-41). *Chen et al.* also teaches developing candidate phrases from the text which appear reasonable. The frequency of words within phrases and the frequency of the phrases are then used

Serial No.: 09/600,674

to select key words for a document because of the belief that the most frequency phrases are most likely to be indicative of the document content. (Column 5, line 45-column 6, line 2).

Accordingly, *Chen et al.* describes a structure in which a list of words or phrases are presented in relation to their frequency in a document. Such simple frequency structure does not represent a structure in which a string (e.g., word or phrase) is associated with each pair of text units (e.g., pair of sentences or pair of documents) in which the string occurs as recited in claim 1. Hence, *Chen et al.* does not make up for the deficiencies in *Chen et al.*

Therefore, even if the teachings of *Inaba et al.* and *Chen et al.* were to be combined, the claimed invention would not result.

Further still, one having ordinary skill in the art would not be motivated to combine the teachings of *Inaba et al.* and *Chen et al.* as they are non-analogous art. *Inaba et al.* is directed merely to a document retrieval system which indexes documents in terms of relevance for particular words. The goal of the system in *Inaba et al.* is for a user to input particular keyword(s), and for the retrieval system to retrieve the documents(s) that are most relevant to those keywords.

*Chen et al.*, on the other hand, is directed to a key phrase generation system that searches within a particular document to identify phrases that share the most words with other phrases. *Chen et al.* uses the key phrases to act as a summary of the document. This is a completely converse goal and operation from the system of *Inaba et al.*

Moreover, although the Examiner asserts that "text pairs" of *Inaba et al.* are represented by a word and a document and could be used in the system of *Chen et al.*, such combination is not workable. The phrases in *Chen et al.* are used to determine the number of occurrences within document text of terms within the phrases. However, the "text pairs" of *Inaba et al.* consist of a single word and the entire document; for both cases it is meaningless to determine the number of occurrences within document text of terms within a single word, or terms within the entire document.

Serial No.: 09/600,674

For at least the above reasons, applicants respectfully submit that the rejection of claim 1 should be withdrawn. *Inaba et al.* and *Chen et al.*, whether taken alone or in combination, do not teach or suggest a method as recited in claim 1.

Furthermore, the various dependent claims may be distinguished based on the features recited therein. For example, as mentioned above claim 3 recites how the text units are sentences. Neither *Inaba et al.* nor *Chen et al.* teach or suggest text units being specifically sentences, as recited in claim 3.

As a result, withdrawal of the rejection is respectfully requested.

### **III. REJECTIONS OF CLAIMS 4-6 AND 8 UNDER 35 USC §103(a)**

Claims 4 and 8 are rejected under 35 USC §103(a) based on *Inaba et al.* in view of *Chen et al.*, and further in view of *Liddy*. Claims 5 and 6 are rejected under 35 USC §103(a) based on *Inaba et al.* in view of *Chen et al.* and *Liddy*, and further in view of *Baker*. Each of these rejections is respectfully traversed for at least the following reasons.

Claims 4-6 and 8 each depend from claim 1, either directly or indirectly. As a result, each can be distinguished over the teachings of *Inaba et al.* and *Chen et al.* for at least the same reasons discussed above. Furthermore, neither *Liddy* nor *Baker* make up for the deficiencies in *Inaba et al.* and *Chen et al.* Consequently, withdrawal of the rejections is respectfully requested.

### **IV. CONCLUSION**

Accordingly, all claims 1-9 are believed to be allowable and the application is believed to be in condition for allowance. A prompt action to such end is earnestly solicited.

Should the Examiner feel that a telephone interview would be helpful to facilitate favorable prosecution of the above-identified application, the Examiner is invited to contact the undersigned at the telephone number provided below.

Serial No.: 09/600,674

Should a petition for an extension of time be necessary for the timely reply to the outstanding Office Action (or if such a petition has been made and an additional extension is necessary), petition is hereby made and the Commissioner is authorized to charge any fees (including additional claim fees) to Deposit Account No. 18-0988.

Respectfully submitted,

RENNER, OTTO, BOISSELLE & SKLAR, LLP



Mark D. Saralino  
Reg. No. 34,243

DATE: February 20, 2004

The Keith Building  
1621 Euclid Avenue  
Nineteenth Floor  
Cleveland, Ohio 44115  
(216) 621-1113  
C:\BENYAMA\ya-map728.amd.wpd